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Original communication

Mental health of young offenders in Switzerland: Recognizing psychiatric symptoms during detention

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ABSTRACT

We reviewed the medical records of the 118 adolescent detainees which had at least one consultation by a psychiatrist at the prison health facility during 2007. General practitioners used the International Classification of Primary Care (ICPC-2) for recording health problems. Psychiatrists used the International Classification of Diseases (ICD-10) for making psychiatric diagnoses. The concordance between the mental health assessment done by general practitioners using the ICPC-2 and the diagnoses proposed by psychiatrists was globally satisfying. The five most frequent ICD categories (conduct disorder, drug abuse, alcohol abuse, personality disorder, adjustment disorder) encompassed the most frequently reported ICPC-2 psychological symptoms. Several associations between psychological symptoms and socio-demographic characteristics were observed. Apart from providing a description of the mental health of adolescent detainees in one of Switzerland's largest detention centre for minors, results suggest that general practitioners can adequately identify frequent mental disorders in such contexts.

1. Introduction

It is usually accepted that mental disorders affect between 40% and 70% of adolescents who come into contact with the justice system,[1] and that as many as two thirds of minors in custody meet diagnosis criteria for one or more psychiatric disorder.[2–6] In a British survey, 75% of young people in penal establishments were described as needing mental health care.[7] In both sexes, conduct disorder is the most common disorder. Studies also revealed high comorbidity rates. In a large study including more than 1800 juvenile delinquents, most juvenile offenders met criteria for two or more disorders rather than only one disorder.[8] A study on psychopathology and delinquency in adolescents highlighted that juvenile delinquents with a psychiatric disorder were more likely to receive longer sentences.[9] In another survey, most disturbed youths still showed marked functional impairment three years after release.[10]

A national study on young offenders aged 16 to 20 years old in England and Wales[11] identified the five mental disorders considered to be the most frequent in detained adolescents: personality disorder, psychotic disorder, neuroses, hazardous drinking and drug dependence. Ninety-five per cent of this cohort presented at least one of these five mental disorders, and 80% more than one. These figures tended to be in the upper range of usually reported figures. The waiving of the age criterion for personality disorders (18 years of age) in this study explained, at least in part, these differences. In a birth cohort study including more than 2500 young Finnish, youth crime was essentially linked to antisocial personality and substance use disorders.[12] Indeed, a high proportion of substance abuse disorder is found in juvenile delinquent populations (40% to 70%).[2,13] In a study conducted in a sample of incarcerated juveniles in the US, between 71% and 85% of participants met criteria for one mental disorder and one-third had co-occurring mental health and substance abuse disorders.[14] Substance abuse is associated with higher co-morbid psychopathology, more violent and antisocial behaviour among juvenile offenders[2] and HIV risk behaviours.[15]

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Differences between male and female juvenile offenders have been the object of numerous studies. Only a few however included incarcerated youths. Compared to males, female offenders have been generally reported to have more mental disorders,[16] especially depression[6] and physical complaints.[11] Both current and lifetime risks of suicide were higher in females than in males in detention in Austria.[17] Females are also more likely to present a high level of symptoms[9] and to have received previous psychiatric help.[18,19] In a study conducted among a sample of female youths incarcerated in California, 80% had symptoms of an emotional disorder or substance use problem, and almost two thirds (63%) had a history of recidivism.[20]

Most studies were conducted in North America or in England. It is important to consider researches from other European countries, because juridical systems vary and access to care in prison differs widely. A Greek study including youth delinquents aged 13 to 24 years found that three-quarters of them had significant mental health problems.[21] In Holland, 108 minors were assessed before trial, and three-quarters were identified as having at least one psychiatric disorder.[22] Respectively 46% and 17% of these youths met the criteria for two or three psychiatric diagnoses.

A Swiss study assessed the alcohol and drug use of 82 male adolescents (44% of which were offenders attending an educational program).[23] Although the greatest proportion of these adolescents used alcohol, results showed that juvenile offenders were more likely to use cannabis. Juvenile offenders also more frequently met the criteria of abuse or dependence to this substance.

Co-occurrence of mental disorders and physical complaints was also reported. The likelihood of having a physical complaint also increased with the number of associated mental disorders.[24]

In a study on the health problems for which primary care services were provided to adolescents in detention, we confirmed high rates of mental health problems among adolescents detained in a juvenile detention centre in Switzerland.[25] The study was conducted from a primary care perspective and thus provided insufficient information on the precise profile of psychiatric diagnoses for which adolescents received psychiatric care in this context.

The aims of the present study were to:

1. Provide a description of the mental health problems for which adolescents require psychiatric care in detention in order to adapt our services.
2. Assess the extent to which a classification used in primary care services (ICPC-2) accurately captured the range of psychiatric problems requiring psychiatric care in this population.

2. Method

2.1. Setting

The study took place in the juvenile detention centre of Geneva district, situated in the French-speaking part of Switzerland. This is a 30-bed facility divided in two sections: a pre-adjudication section and a second section for adolescents who have been sentenced to an educational placement in detention. The facility has a primary care and psychiatric health service attached to it. The independence of caregivers is guaranteed by the attachment of the service to the Geneva University Hospitals rather than to the prison administration. The health service delivers approximately 3000–3500 consultations a year, half of which are psychiatric consultations. New inmates are assessed by a nurse within 48 h of admission and referred to the medical service according to need. At any time, inmates can also ask for a medical consultation and are then addressed to a primary care physician or occasionally directly to a psychiatrist in case of obvious severe psychiatric symptoms.

2.2. Procedure

The medical files of all the adolescents who had had at least one psychiatric consultation over a one-year period were retrospectively reviewed. All the health problems for which care had been provided during detention were coded using the French version of the international classification of primary care, second edition (ICPC-2).[26] In primary care settings, ICPC-2 has benefits over the World Health Organization's International Classification of Diseases, tenth edition,[27] as both symptoms and diagnoses are taken into account with the ICPC. The instrument allows for simple linkage between reason for encounter, diagnosis and intervention and for ordering of clinical data in an episode of care structure.[28] Since its introduction in 1987, the ICPC has been translated in more than 20 languages.[29] In several studies, the ICPC-2 has been found to be adequate, reliable, and feasible for use in primary health care settings. In a recent retrospective study involving eight European countries, ICPC-2 was also successfully used among children and adolescents.[30] The instrument is widely used in Australia, through the "BEACH" (Bettering the Evaluation and Care of Health) program, a continuous national study of general practice that has been going on for several years.[31] Limitations include the absence from the ICPC-2 of psychosomatic and somatoform disorders,[29] and frequent missing codes when physicians do not adhere to the ICPC-2 standard.[32] In addition to the ICPC-2, we used the ICD-10 to code psychiatric diagnoses reported in the files by the psychiatrists and psychologist. More precisely, we clustered the diagnoses in categories regrouping specific mental disorders (e.g. F10 includes F10.1, F10.2, F.10.3, (…) F10.9).

Socio-demographic data (age, sex, nationality) were also recorded. One coder (DH) reviewed all the files and followed strict coding rules for ICPC-2 established by the research team at the initiation of the study. Another researcher (DG) coded the psychiatric diagnoses according to ICD-10. All data were recorded anonymously. The research project was approved by the Ethics Committee of the University Hospitals of Geneva. Statistical analyses were done with S-Plus 7.0 Enterprise Developer (Insightful Corp. Seattle, WA, USA). Chi square tests were used to measure the association between two variables. Default type one error rates for the tests were set at 5%.

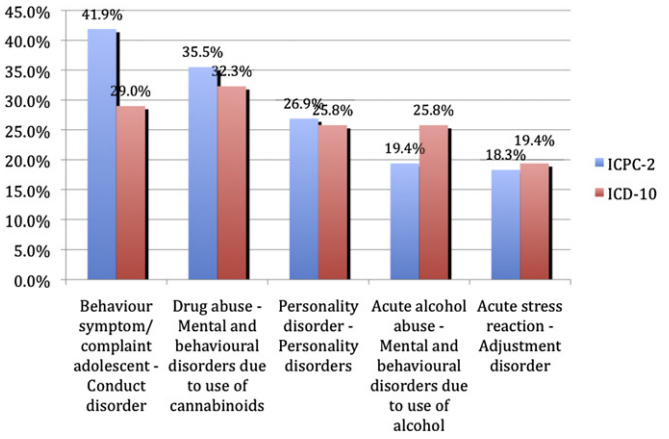
3. Results

3.1. Description of the sample

A total of 314 adolescents stayed in the detention facility that year. Most (88% of males, 95% of females) benefited from a health assessment during their detention. A quarter of these (26.8%) saw only the nurse whereas 195 adolescents (62.1%) had a full medical assessment by the primary care service. The nurse referred adolescents to the general practitioner on the basis of an unstructured clinical interview. The general practitioner further referred 118 adolescents for a psychiatric consultation, following the identification of mental health problems or psychiatric symptoms on the ICPC-2. All these 118 adolescents were included in the present study. The sample was in majority male (72%), with average age of 16.5 years old. The youngest was 12 years old and the oldest 19 (he started his detention program at 17). The length of incarceration was 69 days on average.

3.2. Prevalence of psychological symptoms and mental disorders

Graph 1 presents the five most commonly coded ICPC-2 mental health problems/ICD-10 diagnoses. Behaviour symptom/complaint was the most frequently reported ICPC-2 mental health problem



Graph 1. Prevalence of psychological symptoms and mental disorders.

(41.9%), followed by drug abuse (35.5%), personality disorder (26.9%), acute alcohol abuse (19.4%) and acute stress reaction (18.3%). More than a half of the population presented at least two mental health problems as recorded in primary care (54.8%) and a quarter (25.8%) at least three, while 88% of subjects had at least one ICD diagnosis. Mental and behavioural disorder due to use of cannabis was the most frequent diagnosis (32.3%), followed by conduct disorder (29%), personality disorder, and mental and behavioural disorder due to use of alcohol (both 25.8%) and adjustment disorder (19.4%). Almost half had at least two diagnoses (49.5%) and almost a quarter at least three (23.7%). Noticeably, no girls were diagnosis free.

3.3. Correlations between ICPC-2 symptoms

Correlations between ICPC coded psychological symptoms and complaints are presented in Table 1. A strong correlation was observed between acute alcohol abuse and drug abuse ($p = <0.001$). Correlations between behaviour symptom/complaint adolescent and personality disorder ($p = 0.004$) and between drug abuse and personality disorder ($p = 0.025$) were also present.

3.4. Correlations between ICD-10 diagnoses

Correlations between ICD diagnoses are presented in Table 2. The strongest was between mental and behavioural disorder due to use of cannabis and use of alcohol ($p = <0.001$). Another significant correlation appeared between conduct disorder and personality disorder ($p = 0.017$).

3.5. Socio-demographic factors and substance use

According to the ICPC-2 symptoms, girls were more likely to show acute stress reaction than boys ($p = 0.035$). Non-Swiss youth were also more likely than youths with the Swiss nationality to show acute stress reactions ($p = 0.025$). Swiss participants were more likely to present acute alcohol abuse ($p = 0.044$). Drug abuse behaviour was associated with the use of tobacco ($p = 0.020$). According to the ICD-10 diagnoses, conduct disorder was associated with the use of tobacco ($p = 0.18$). Compared with boys, girls were more likely to present adjustment disorder ($p = 0.15$).

4. Discussion

4.1. Context of the study

Our findings confirm the high prevalence of mental health problems in this population. ICD-10 used by psychiatrists more specifically addresses mental health disorders than ICPC-2 used by general practitioners. To compare both tools in our context, we took in consideration ICD-10 main categories only. Although ICD-10 more specifically addresses mental disorders, ICPC-2 used as an overview tool appears to be a reliable tool to make a first screening. Indeed, ICPC-2 symptoms have been generally confirmed by ICD-10 categories.

4.2. Comparison with available data

Most studies report high prevalence of mental disorders among minors in custody. Differences among prevalence studies result in part from the diversity of custody law and practises across countries, as it has been demonstrated for adult detainees.[33] Differences also reflect methodological differences between studies. Regarding specifically the screening and diagnosis instruments, the Diagnostic Interview for Children (DISC),[3,8] the Child Behavior Check-List,[4] the Adolescent Psychopathology Scale (APS),[14] the Salford Needs Assessment Schedule for Adolescent (SNASA),[16] the Youth Self Report (YSR),[21] the Structured Clinical Interview for DSM-IV (SCID)[11] and clinical diagnosis based on ICD-10[12] have been used. We chose the ICPC-2 for three reasons. Firstly, general practitioners

Table 1
Correlation between the five most frequent psychiatric symptoms and complaints (ICPC-2).

		Behaviour s/c adolescent		Drug abuse		Personality disorder		Acute alcohol abuse		Acute stress reaction	
		Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent
Behaviour s/c adolescent	Present			38%	44%	**17%**	**51%**	35%	43%	12%	49%
	Absent			62%	56%	**83%**	**49%**	65%	57%	88%	51%
	p-value			0.659		**0.004**		0.597		0.006	
Drug abuse	Present	31%	37%			**54%**	**28%**	**76%**	**25%**	29%	36%
	Absent	69%	63%			**46%**	**72%**	**24%**	**75%**	71%	64%
	p-value	0.659				**0.025**		**<.001**		0.78	
Personality disorder	Present	**10%**	**37%**	**41%**	**18%**			35%	24%	24%	26%
	Absent	**90%**	**63%**	**59%**	**82%**			65%	76%	76%	74%
	p-value	**0.004**		**0.025**				0.363		0.999	
Acute alcohol abuse	Present	15%	20%	**41%**	**7%**	25%	16%			6%	21%
	Absent	58%	80%	**59%**	**93%**	75%	84%			94%	79%
	p-value	0.597		**<.001**		0.363				0.183	
Acute stress reaction	Present	**5%**	**28%**	16%	20%	17%	19%	6%	18%		
	Absent	**95%**	**72%**	84%	80%	83%	81%	94%	82%		
	p-value	**0.006**		0.78		0.999		0.183			

Statistically significant results in bold.

Table 2
Correlation between psychiatric diagnoses (ICD-10).

		Conduct disorders		Disorders due to cannabinoids		Personality disorder		Disorders due to alcohol		Adjustment disorder	
		Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent
Conduct disorders	Present			37%	24%	**9**%	**34**%	29%	28%	17%	31%
	Absent			63%	76%	**91**%	**66**%	71%	72%	83%	69%
	p-value			0.223		**0.017**		0.999		0.38	
Disorders due to cannabinoids	Present	42%	28%			39%	30%	**76**%	**19**%	28%	33%
	Absent	58%	72%			61%	70%	**24**%	**81**%	72%	66%
	p-value	0.223				0.448		**0**		0.782	
Personality disorder	Present	**8**%	**31**%	30%	22%			33%	22%	22%	25%
	Absent	**92**%	**69**%	70%	78%			67%	78%	78%	75%
	p-value	**0.017**		0.448				0.389		0.999	
Disorders due to alcohol	Present	23%	22%	**53**%	**8**%	30%	20%			6%	27%
	Absent	77%	78%	**47**%	**92**%	70%	80%			94%	73%
	p-value	0.999		**0**		0.389				0.063	
Adjustment disorder	Present	12%	22%	17%	21%	17%	20%	5%	24%		
	Absent	88%	78%	83%	79%	83%	80%	95%	76%		
	p-value	0.38		0.782		0.999		0.063			

and psychiatrists work in collaboration on a daily basis in the detention centre we work at. Secondly, less than a half of detainees are submitted to a detailed psychiatric diagnostic examination. Thirdly, we wished to assess the reliability of diagnoses across medical specialities (psychiatry and primary care). We were indeed able to confirm that the five most frequent ICPC-2 symptoms reported by young detainees to primary care practitioners correspond to the five most frequent ICD-10 diagnosis categories evaluated by psychiatrists. Prevalence of symptoms and disorders were also similar.

4.3. Young detainees' mental health profile

In our sample, 91% of detainees presented ICPC-2 psychological symptoms or complaints and 88% at least one ICD-10 diagnosis. These figures correspond to the high estimates found in the medical literature. In accordance with available data from other centres, hazardous drinking and personality disorders were highly prevalent in our sample. In our study, conduct disorder probably encompasses oppositional defiant disorder (ODD) and attention-deficit hyperactivity disorder (ADHD).[2] Indeed, ADHD is described in the context of youth incarceration but is absent from our results.[4,8,14] DSM-IV category disruptive behaviour disorder includes conduct disorder, ODD and ADHD. The fact that this category appears differently in ICD or ICPC may partly explain this omission. Learning disability and mild mental retardation were rarely diagnosed, although these disorders might affect one fifth of young detainees.[16]

Young female detainees represent only a small fraction of the centre detainees. Few studies compared ratio of mental disorder between sexes in the same place of detention. There is however evidence that young female offenders have a higher level of symptoms.[9,11] Our study tends to confirm this result.

The observation that non-Swiss detainees from immigrant families experienced adjustment disorders more often that Swiss ones is probably linked to a poor integration into the educational and mental health system of the host country prior to incarceration.[34] Literature data on the influence of ethnic differences in this context are however inconsistent. Some studies reported less psychopathology in immigrant incarcerated youths compared to native ones.[35,36]

The present study has several limitations. Firstly, we used an observational approach and analysis was performed on a retrospective basis. This led us to non-totally reliable quotation. Secondly, the ICPC was not validated in prison settings, but few psychometric or diagnostic tools were. Thirdly, only detainees who had seen a psychiatrist were considered. Because of the referral procedure, usually involving a first clinical assessment by a nurse and then a consultation by a general practitioner and/or a psychiatrist, it is possible that some adolescents with mental health problems were missed. Our procedure probably led to the selection of the most disturbed adolescents, who couldn't be taken care of by the general practitioner, and those who stayed for long periods of time at the facility. Indeed, adolescents who did not benefit from a health assessment or those who only saw a nurse made very short stays compared with those who saw a psychiatrist and/or a general practitioner during their detention. The former group was mainly composed of remand prisoners staying in the pre-adjudication section, while the latter comprised all the adolescents sentenced to an educational placement.

5. Conclusion

As pointed by Teplin et al., few empirical studies exist on psychiatric disorders among youth in detention and available data give conflicting figures, because of variations of sampling strategies, small samples and problems in measurement.[37] A substantial number of youth in detention need mental health services and, among other recommendations, these authors advise a systematic screening for mental health needs within 24 h of admission to a juvenile facility. Our study provides a description of psychiatric symptoms and mental disorders among a sample of incarcerated adolescents. It shows the potential value of the ICPC-2 as an assessment tool for primary care practitioners working in detention institutions for adolescents and young adults.

Conflict of interest
None of the authors have competing interest.

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Ethical approval
The research project was approved by the Ethics Committee of Geneva University Hospitals.

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